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General Articles

DUTIES AND STATUS OF A MUNICIPAL VETERINARY OFFICER*

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In writing a paper of this nature I find that I am labouring under certain difficulties. My first, of course, is to limit the scope of such a paper without detracting from its usefulness. Then, again, I have asked myself the question as to what extent my audience will be interested in such a subject; it may interest some, and be perhaps a little boring to others. Should I be guilty of referring with undue frequency to Durban and what is happening there, I must crave your indulgence.

A minute description of the duties and functions of municipal veterinarians controlling abattoirs and dairies with their ancillary services might form a worthy basis for a fellowship or doctorate thesis in time to come. I fail to see why these academic distinctions should be possessed almost exclusively by the "high brows" of our profession. Surely, a practical paper on such a subject is of as much value to the profession, and the community, as, for instance, a description of some obscure pathological or bacteriological entity. Perhaps the "low brows," with their innate modesty, are at fault.

In a sketchy account of the duties of a municipal veterinarian, as this paper purports to be, no details whatsoever will be given, but I will endeavour to refer to a few interesting points as occasion arises.

There are three domains of veterinary activity in the municipal administration of any town the size, shall I say, of Durban, the total population of which is over 200,000, of whom the Europeans number 94,000. For the sake of convenience I will refer to them under the following headings, namely, (1) Abattoir Administration, (2) Milk Hygiene, and (3) the Supervision of the Animal Transport System.

*Read at the Annual Meeting of the Natal Branch, S.A.V.M.A., in June, 1936.

I. ABATTOIR ADMINISTRATION

Abattoir administration is essentially a public health service, as it deals with the control and inspection of animal products used as food for man. It is true that many of the abattoirs have developed into what I would regard as semi-trading concerns, and this is entirely due to the necessity of having to provide such subsidiary services as refrigeration facilities, the manufacture and sale of by-products, the inauguration of auction sales, etc. These are unavoidable as they are part and parcel of the system of centralised slaughtering and the preparation of meat, which is so keenly advocated throughout the world to-day.

When dealing with the subject of abattoir administration, I can look only with a feeling of pride and gratification at the status accorded to veterinarians in this country. In the larger centres, such as Johannesburg, Cape Town, Durban, and Bloemfontein, the position of the veterinarian is as it should be, *i.e.*, in supreme charge of the institution, and I would take this opportunity of expressing my gratitude to those pioneer members of our profession who are responsible for the creation of such an admirable status.

Where large centres are concerned, I consider that the abattoir department should be a separate one, and not a sickly appendage of any other concern. Let us leave South Africa for one moment, and consider, for instance, the miserable status, or lack of status, of many of our confrères in Great Britain, excluding the County of London, Scotland and Northern Ireland. It would seem that with the ultra-conservatism which exists there, the local authorities are still muddling away under an antiquated Public Health Act of 1875, by the provisions of which the local inspector of nuisances, or the village plumber, has more authority in the matter of unsound meat than the veterinary surgeon. Surely, such a state of affairs is deplorable and makes one ponder and ask the question—"Have we faithfully followed the motto of our profession, *Vis Unita Fortior*?" I frankly admit a happier condition prevails on the Continent.

I am astounded to read in the *Veterinary Record* from time to time, that some of the leading lights of our profession are defending the position of private slaughter-houses; they state in a most unctuous way that there is "a lot to be said for them," and that they are serving a very useful purpose, etc. Let us put all humbug aside and say with no uncertain

voice that they are a menace to any country. In some centres there are as many as 96 depôts or slaughter-houses where animals may be killed. How can any local authority cope with such a position for meat inspection purposes, and how very undesirable such a state of affairs is in any country with a high incidence of bovine tuberculosis. By the term "private abattoirs" I do not in any way include privately owned abattoirs under Government supervision, as these, like municipal abattoirs, are controlled by the Public Health Act of 1919, and regulations published thereunder.

Now what are the duties of an abattoir director? Naturally he is responsible for the working of the whole concern—administratively, financially, and otherwise. It is his clear duty to carry out the policy of the Council, as laid down by resolutions passed from time to time, and to advise the Council generally on all matters appertaining to the conduct of such institutions. A veterinary surgeon in charge of an abattoir must be prepared to accept all these responsibilities if he wants to function in an efficient manner. If he refuses, then there are others ready to fill the gap, and the control of abattoirs will gradually slip into the hands of semi-skilled laymen.

The activities of an abattoir may be divided up into the following sections for the purpose of this paper, and the director must keep in touch with every phase of the work carried out thereunder.

(*a*) *Administrative and Clerical.*—It is the director's duty to deal with all the correspondence, excepting that relating to essentially routine matters, which is received and dispatched from the abattoir, and in this connection he must be *au fait* with the greatest detail. He is responsible for the compilation of all reports, and their proper presentation to the Council at meetings convened regularly for this purpose. The standing committee in Durban is known as the Markets and Abattoir Committee. Staff control also falls under this section, also the carrying out of the comprehensive bye-laws which have been approved by the Provincial Council of Natal, for the proper conduct of the abattoir.

(*b*) *Public Health.*—This, of course, is the most important section of our work, and it is this aspect which prompted some local authorities to erect abattoirs; it is, perhaps, the reason for their very existence to-day. It should be the duty of every local authority of any size to provide a central depôt where animals can be humanely and efficiently killed, dressed, and prepared, and offered for sale under proper hygienic conditions. A good system of meat inspection is of paramount importance, and this can only be arranged when a scheme of centralised slaughtering is in vogue, and where inspection is compulsory, and not "permissive." At the Durban abattoir the following numbers of animals are dealt with annually: 36,000 cattle, 200,000 sheep and 25,000 pigs.

The meat inspection staff consists of two qualified meat inspectors, holding the certificate of the Royal Sanitary Institute, and four learner meat inspectors. All the latter have had at least three years' service at this institution and will qualify in due course.

The ideal meat inspection system is one that will not permit of any unsound meat being placed on the market, and one that will also ensure that no meat is condemned in any unnecessary manner. This objective, however, is not always attainable in practice. It is quite conceivable to me, for instance, that even with the most meticulous meat inspection procedure, cases of *Cysticercus bovis* and *cellulosae* infection evade even the most painstaking and methodical meat inspectors.

The system of meat inspection is controlled by Government Notice No. 2118 of 1924, published under the authority of the Public Health Act, No. 36 of 1919, wherein the Minister of Public Health publishes regulations "regarding the registration and control of slaughter-houses, and places where meat is kept and stored, and the procedure to be followed, and the standards to be observed in the inspection of meat and animals intended for human consumption." The regulations are issued in pamphlet form, and they constitute instructions to the meat inspector for the performance of his duties. One of the most important features of a meat inspector's work is to arrange his inspections in such a manner that he is able at all times to correlate the viscera with the carcase to which it belongs. This may appear to be a very elementary point and simple to carry out, but in the hurly-burly of busy abattoirs mistakes are likely to occur if the meat inspectors do not exercise the requisite care. I am stressing this point as it constitutes one of the most essential features in the *modus operandi* of efficient meat inspection.

It is the duty of this section to see that (1) all slaughtering is humanely carried out, (2) the dressing is efficiently done, (3) the employees are suitably clad, (4) the floors are kept clean, (5) suitable implements and wiping down cloths are provided, (6) proper conveyances only are allowed to enter the abattoir for the conveyance of meat therefrom, and, lastly, that all operations are performed under proper sanitary and hygienic conditions.

I am not going to pretend that the carrying out of all these supervisory duties is a simple matter in practice, as it is not. It must be borne in mind that most of the employees doing slaughtering, dressing, and conveyance of meat are engaged by the auctioneers and butchers who are users of the abattoir, and those in charge have to contend with all the

inherent difficulties of this method of employment. In my opinion, utopian conditions will only be arrived at when the director of an abattoir has absolute control over all the employees, and when his administration receives cattle at the off-loading bank, and hands the dressed product over to the owner in the cooling hall. I am glad that my opinion in this connection is supported by abattoir directors of great eminence.

The veterinarian's decision is absolute in the matter of condemnations, and the meat inspectors have only powers of detention. Again, the veterinarian's power is supreme in all *ante-mortem* examinations. It is essential that a suitable condemned room should be provided in a centrally placed position, in order to serve all sections of the abattoir, and that no one, other than authorised officials, should have access to it.

The point that now arises is this—to what extent should or can a veterinarian function under this particular section? My reply is that it is his clear duty to inaugurate an efficient system of meat inspection, and to supervise its functioning. He must also make a point of examining all major condemnations; he simply has not the time to scrutinise the minor ones. It will be seen from these remarks that the meat inspectors with their powers of detention undertake the more important portion of the inspection work, and as there are a thousand animals passing through an abattoir of this size per working day, I cannot see how things can be arranged otherwise. I am wondering how many veterinary surgeons there are here to-day who would be prepared to undertake the purely meat inspection side of the work, with all the inherent disabilities. I am sure it will be conceded that the meat inspectors fill a very useful rôle.

After four years' experience of the directorship of the abattoir I control, I can truthfully say that in my opinion the veterinarian is the only fit and proper person to be entrusted with the management of these institutions, and in making these remarks I am not in any way swayed by my loyalty to the profession to which I am proud to belong.

I will give you one simple instance in support of my contention. In my short tenure of office I have dealt with two outbreaks of anthrax at my abattoir. Smears were examined on the spot, and the necessary prophylactic measures adopted in a most prompt manner. What would the position be if such matters were left to laymen? One dreads to think of the consequences.

(*c*) *Accounting Section.*—This section falls under the director's supervision, and he is assisted by a whole-time accountant, and his assistants. The director is responsible for the financial policy adopted, and this is done in collaboration with the City Treasurer. The director must exercise control over all items of income and expenditure, and the drafting of estimates each year. Under this section is run the Compensation Fund, the object of which is "to provide means for the payment of compensation to the owner of any carcase slaughtered at the abattoir, in accordance with the Abattoir Regulations from time to time in force, which is found to be affected wholly or partly with any of the following diseases, *viz.*, cysticerci, tuberculosis (excepting the carcase of an animal which was a clinical case and excepting also the carcase of an animal which has given a positive reaction to the tuberculin test), sarcocysts, jaundice, melanosis, actinomycosis, neoplasms and pyaemia, and is on that account condemned for human consumption."

(*d*) *Cold Storage Section.*—At the Durban abattoir there are six cold storage rooms, and these were erected for the convenience of butchers. One room is set aside for the freezing of eligible carcases, in terms of Government Notice No. 1455 of 1933. The chief engineer is responsible to the Director for this section. I am of the opinion that all carcases should be chilled for at least 36 hours before removal from an abattoir, and that it is a bad practice to remove carcases a few hours after slaughter, when the "body heat" is still in the meat.

(*e*) *By-Product Section.*—This falls under the engineering section. It was provided for the disposal and treatment of all blood, condemned meat and offal, and other waste products. A blood meal is manufactured, which is a valuable fertiliser on account of its high nitrogen content. A bone and meat meal is manufactured from the condemned meat, and this constitutes a most valuable poultry food. Two grades of fat are also manufactured, and this is sent to the soap works. The gross receipts from these by-products amount to approximately £4,000 per annum.

There are other subsidiary activities in an abattoir, such as (1) lairage accommodation, which is supervised by the official lairsman, (2) weighing facilities, which are controlled by the official scalesman, (3) gut cleaning factory, (4) hide sheds, etc., but I propose passing these without further comment.

It is the duty of the abattoir director to co-operate with the Central Government in every possible way. At the abattoir all cases of tuberculosis in cattle and pigs, anthrax outbreaks, etc., are duly notified. Reports are also sent weekly dealing with underweight cattle from adjoining territories. The City has provided a central testing station at the abattoir, where all dairy cows are tested for tuberculosis preparatory to their removal to the respective dairies.

II. DAIRY HYGIENE

I do not propose to refer to this subject in any great detail, and I will therefore deal in

a brief way with the duties which fall to the lot of the municipal veterinary officer engaged on this work. I think a most interesting and comprehensive paper on this subject might be presented to this gathering at some subsequent meeting, and I feel quite sure that my colleague, Colonel Harber, would rise to the occasion.

In Durban this section comes under the control of the Medical Officer of Health, and I simply act as a consultant on all matters of important policy. The arrangement is working most smoothly, and a very cordial relationship exists between both the departments. Here, again, I am a firm believer in the old adage of "the bootmaker to his last," and I think utopian conditions will only be arrived at when this section falls under a veterinarian who is a head of a department. In saying this, I am sure that I am only echoing the views of our Medical Officer of Health, who has done so much for our profession in the past. I frankly concede that there are difficulties, and that there is a certain amount of overlapping of duties, and we must not overlook the fact that the Medical Officer of Health is responsible for the complete sanitary arrangements of the whole area under his control. I think it is essential that the supervision exercised over cowsheds, and dairy cows, etc., should come under the direct control of a veterinarian, and that if this course is not adhered to, disastrous results are bound to follow.

Prior to the introduction of the compulsory tuberculin test in 1931 in the Durban area, it was found that excellent work had been done by the sanitary inspectors in connection with the milk storage rooms and delivery facilities, etc., etc., but the other aspects had been neglected. I found, on inspection of these dairies, that many of the cowsheds were of poor construction, and the arrangement generally bad. I am not blaming anyone for this state of affairs, but the system of employing sanitary inspectors to do work which rightly belongs to the sphere of the veterinary surgeon was definitely wrong. How are sanitary inspectors to know anything about the management of animals in sickness and in health? I think I am right in saying that the most startling incidence of bovine tuberculosis, as revealed by the test, could be largely attributed to the factors I have mentioned, and I feel to-day that other local authorities in this country are blundering along the same lines, and will have to pay the penalty in time to come.

The tuberculin test as carried out in Durban has not been the failure that some people have made it out to be. On the contrary, I think Durban is definitely in the van of progress; we have probably the best cowsheds in the country, and while one would not go so far as to say that tuberculosis was eliminated, or anything approaching that, I think it is safe to say that the disease has been reduced to a reasonable minimum, and I ascribe all this very largely to the intervention of veterinary science.

There are, approximately, eighty registered dairies in the Durban and peri-Durban area. All these dairies are listed by the Municipal Veterinary Surgeon, and plans and all details are kept. In this section, again, there is a comprehensive set of bye-laws which he is called upon to administer.

These dairies are inspected at regular intervals by the municipal veterinary surgeon. It is possible to inspect them all, and the animals contained therein, every six weeks or so. He chiefly confines his attention to the cows and cowsheds, and the general management, and his assistant, who is a qualified sanitary inspector, deals with such other problems as (1) water supply, (2) drainage, (3) cleanliness of surroundings and freedom from flies, (4) construction of buildings (whether in accordance with bye-laws, etc.), (5) milk rooms, (6) inspection of utensils, (7) inspection of employees and their overalls, etc., (8) inspection of cooling appliances and delivery vans, etc., (9) collection of samples for analytical and bacteriological tests.

There are a host of other duties, and these were dealt with in a paper presented by the Acting Medical Officer of Health, Pietermaritzburg, at the last meeting of this Association, so I do not propose to weary you with them now.

The municipal veterinary surgeon usually times his visits so that he arrives immediately after milking operations have been completed, and it is his duty to carry out what is known as a clinical examination. Udders and the associated glands are examined, and the lungs of suspicious animals auscultated. Samples of milk are taken from suspicious udders for microscopical or biological tests. He is permitted to apply the tuberculin test for diagnostic purposes, and is approved of by the Director of Veterinary Services in this regard. The general health and condition of the animals are observed; any cows suffering from mastitis or any other diseases are isolated, and instructions given regarding the disposal of milk from such animals.

In Durban the analytical test is carried out by the City analyst, and the bacteriological test by the Union Health Department. I see no reason why the latter test should not be carried out by the municipal veterinarian, and a suitable laboratory provided for the purpose.

III. ANIMAL TRANSPORT SECTION

In Durban the complete control of animal transport falls under the abattoir director, who has full responsibility for the control of this concern — administratively, financially, and otherwise.

There are two hundred horses and mules at the city stables, and approximately 160

complete units are turned out daily for work in the city. A unit consists of a horse, cart, harness and driver, and these are requisitioned for principally by the Health Department for rubbish removal purposes, and by the City Engineer's Department for work on road construction and miscellaneous works. Then, again, various trollies, water carts, and rollers are also sent out. The stables constitute a self-contained unit, as all the shoeing, saddlery, and repairs are effected on the premises by skilled artisans in their respective trades. Having stated that there is a veterinarian in charge, I will not prolong this paper with details, as the duties are self-evident.

As this is the age of mechanisation, and most people appear to be suffering from the complex, it is not, perhaps, surprising that certain councillors, heads of departments, and others should be affected. I am happy to state, however, that the prevailing opinion here at present is that the needs of our city will be best served by a combination of both forms of transport, namely, mechanical and horse-drawn transport. Horse-drawn transport is unquestionably the most efficient and economical where short journeys involving frequent stoppages are concerned. If a horse is too fast for the rubbish collection, why use motor transport? For larger hauls without such stoppages mechanical transport is supreme. I feel quite sure that if those high officials (including Mr. Hore-Belisha) who are advocating the change, had to foot the bill, then there would be a little more hesitancy in the matter.

In Durban we turn out our units (horse, cart, and driver) at 8s. *per diem*, for eight hours' efficient working. It is difficult to conceive a more economical form of transport. We have a proper method of costing, which is subject to Municipal and Government audit. Our newly built scotch carts, fitted with pneumatic tyres and roller bearing axles, have a capacity of two cubic yards, and the all-metal rubbish carts with metal sliding covers have a carrying capacity of three cubic yards. Broadly speaking, we can place five horse-drawn vehicles on the road for the price it costs to put on one mechanical freighter, and as the latter has only a carrying capacity of five cubic yards, it will be readily appreciated that on the score of economy the good old horse has a distinct pull.

While I do not know what the future holds, I think it will be a long time before horse-drawn transport is eliminated in our towns, and at the moment it is pleasing to note that the City Council of Durban has accepted my recommendation to erect branch stables in the outer areas.

This brings my paper to a close. I sincerely trust that the contents are of some interest to my confrères. Some points which I have raised may be regarded as contentious, but they have been inserted for the purpose of stimulating a discussion.

MALIGNANT CATARRH IN BOVINES*

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In this short paper—all too hurridly produced at the urgent request of our Hon. Secretary—I venture to present a few notes on the subject of "Malignant Catarrh in Cattle," three cases of which came under my notice some few months ago. Such a small number of cases perhaps might seem a poor excuse for directing your attention to the subject, were it not for two reasons. The first is the fact that the symptoms bear some resemblance to those of foot-and-mouth disease; indeed, I have been informed that an outbreak in another part of North Wales gave rise to suspicions of foot-and-mouth disease, with the result that it was reported to the Ministry of Agriculture and the usual restricted area was prescribed. The Ministry's official, however, pronounced the condition to be "malignant catarrh."

My second reason is the outcome of these cases, in that all three, in spite of treatment and careful attention, proved fatal. I might add a third, and very good reason, namely, to seek information on the subject and afford those of you who have had experience of the disease an opportunity to contribute something of your knowledge to the meeting.

The only text-book reference which I have available is the first edition of "Wooldridge's Encyclopaedia" in which the condition is mentioned as a disease to be differentiated from cattle plague, the course of which is more rapid, while it is more actively contagious.

Cases Recounted

The first case which presented itself was a white bullock, aged 15 months, brought in from pasture along with four young calves in October last year, and placed in the same shed. Before I was actually called in to see the case, the owner came to me for "something to stop the diarrhoea." The usual anti-diarrhoea powders were prescribed, but with no beneficial results. When I arrived at the farm about a week or so later, the bullock was still in the company of his younger brethren. These I ordered to be removed immediately.

The clinical picture was that of a poor emaciated beast, salivating freely with strings of saliva hanging from the mouth. There was

*Paper presented at a meeting of the North Wales Division, N.V.M.A., held at Llandudno Junction, July 3rd, 1936.

catarrh of the nostrils, a sunken eye and on the muzzle was a scab which was in the process of being shed and was leaving a raw granulating surface. The animal was grinding its teeth. The temperature was 103° F., and remained at this level throughout its course. There was also profuse watery diarrhoea. On one or two occasions clots of blood accompanied the faeces. The mucous membrane of the mouth showed fibrinous deposits and there was a soreness which interfered with the voluntary eating of food. The disease ran a somewhat prolonged course—about eight weeks—and resulted in death from toxaemia and exhaustion.

Treatment consisted of the agents usually employed in diarrhoea, alternated with internal antiseptics such as the hypochlorites and formalin. The mouth was frequently swabbed out with a solution of alum and potassium permanganate.

Owing to the painful condition of the mouth, nourishment—in the form of milk, eggs and demulcent gruels—had to be administered with the horn.

The *post-mortem* examination revealed nothing to account for the disease. No lesions whatsoever were to be observed in any of the internal organs. In addition to this, decomposition set in rather quickly and this made *post-mortem* examination all the more unsatisfactory.

Case No. 2 was a red bullock, aged 15 months. The animal had not recently been in contact with the previous case and was one among three others in another shed.

I attended this case as soon as it was seen that the animal was ailing. There was not the same degree of diarrhoea or of salivation in the early stages, but a very peculiar symptom presented itself which was not evident in the other two cases, *viz.*, the lining membrane of the mouth, of the palate, the gums and the inside of the cheeks, was a deep brick-red—a very unusual colour. It appeared as though the animal had just had a feed of something like pulv. bol. armen. Other symptoms similar to those described in case No. 1 soon set in and death took place in a few days. For some reason which I cannot recall, no *post-mortem* examination was made in this case.

It was after this that I happened to discuss the trouble with a colleague, *viz.*, our President, Mr. Llewelyn Jones. He told me that in recent years he had seen one case only and that had proved fatal. When my third case cropped up, and he had heard of the foot-and-mouth scare, Mr. Llewelyn Jones telephoned to me and expressed his desire to visit the case with me. I was only too glad to have another opinion on the matter, which by now had begun to give cause for grave anxiety.

I am also indebted to Mr. W. T. Rowlands, of Bangor, who very kindly came over and took swabs from this case No. 3. He reported that he had failed to produce cultures from the material taken. The symptoms were as in cases 1 and 2 with the exception of the fact that there was no unusual coloration of the mouth; but in addition there was a slight purulent conjunctivitis. The temperature was 106°. The duration of the attack in this case was 14 days.

On *post-mortem* examination circumstances did not favour us, for the carcase rapidly decomposed and obscured almost completely any lesions which might have been present prior to the death of the animal. Mr. Rowlands again very kindly came over to make the *post-mortem* examination and to take away pathological specimens for laboratory investigation. I will quote the report which he sent me:—

"The organs of the abdominal cavity were, as far as one could judge, macroscopically, quite normal except for a slightly fatty condition of the liver.

"In the thoracic cavity, apart from a number of collapsed areas in the lungs and a slight enlargement of the heart, there appeared to be nothing abnormal.

"The buccal cavity had certain fibrinous deposits on its mucous membranes and the tongue contained one large cheesy necrotic patch on the dorsum. This portion was removed for further examination. The nasal mucous membrane was reddened and in places was covered with a slightly granular deposit.

"Microscopical examination of the necrotic portion of the tongue showed no organism of significance, smears of the necrotic material being negative, and smears of the surrounding tissue being full of various organisms, in all probability contaminants. Under the circumstances no cultural work was undertaken."

Differential Diagnosis

The disease should be distinguished from the following:—

1. *Contagious Stomatitis of cattle*—reputed to be common in Ireland where it is known as "Dirty Mouth." Apparently this is a curable disease running a benign course.

2. *Foot-and-mouth disease*—from which it can be distinguished by the absence of foot lesions and lameness, and the fact that it does not appear to be so actively contagious. Also in malignant catarrh the mucous membranes of the eyes and upper respiratory passages are the parts chiefly involved.

3. *Actinomycosis.*—The symptoms in this disease are sufficiently diagnostic to prevent confusion with malignant catarrh.

Measures Adopted

Since treatment was of no avail, precautionary measures were adopted on the assumption that the disease was contagious. These measures consisted in sterilisation of all feeding and watering utensils, and the swabbing of the mouths and nostrils of all the remaining bovine animals on the premises. Disinfection

of stalls, lime-washing of walls, and the disinfection of the attendants' hands, clothing and boots, were strictly carried out.

Summary

The disease attacked animals of the same age, *viz.*, 15 months old. It did not appear to be actively contagious, as instanced by the fact that a stock bull which was only separated from two of the affected ones by wooden railings showed no signs of the disease; neither did five younger calves that were similarly partitioned off.

Case No. 1 remained among four young calves for a whole fortnight before I attended them and had them removed. This fact, by the way, was in itself sufficient to satisfy one that the case was not one of foot-and-mouth disease. It also suggests that older animals and those much younger are not susceptible. Again, the three cases occurred not at the same time, but at separate intervals, thereby proving that the disease does not spread rapidly, in spite of the malignant nature of the infection.

The clinical picture presented by these cases reminded me very much of the contagious stomatitis in horses which one saw in France during the Great War—a really pitiful sight.

In conclusion, may I express the hope that, incomplete as this effort is, I may have awakened your interest in what appeared to me to be a very alarming disease, and one which might, when met with, result in considerable loss to the farmer.

LAND LOST TO AGRICULTURE

Commenting on the Agricultural Returns (summarised in these columns in a recent issue) the *Scottish Farmer* states that they never indicate to what extent the loss in the total area under crops and grass is due to the taking over of farm land for non-agricultural purposes.

"In last week's issue," proceeds the *Scottish Farmer*, "we reported the purchase by a golf club of a good dairy and grazing farm of 270 acres—land that obviously will soon be lost to agriculture. Last autumn, it will be recollected, the sheep stocks were cleared off two big Perthshire farms to make a deer forest. Many acres are taken up in road-making and widening schemes; all round the big cities many good farms have been used for building or for garden plots, golf courses, tennis courts, etc.; and fertile arable land has also been taken over for aerodromes. We think it is desirable that the Department and the Ministry should keep a record of the nature and extent of the agricultural land that is lost to agriculture each year through being acquired for other purposes."

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The *Pharmaceutical Journal* remarks upon the big rise in the price of olive oil due to the absence of shipments from Spain, and adds: "As Italy cannot supply the needs of this market, and as other countries producing olive oil have little to export, it seems probable that the peak of prices has not yet been reached."

Clinical Communications*

CIRCULATORY DISTURBANCES IN RETRIEVERS FED SUGAR BEET PULP

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Subject.—Labrador retriever—in excellent bodily condition.

History.—The dog was being trained for retriever trials and had not previously been ill. The head gamekeeper had read in one of the gamekeepers' journals that sugar beet pulp was an excellent thing to prevent dogs from picking up filth and scavenging. He therefore ordered 1 cwt. of it and commenced feeding it to his dogs, giving them a handful every morning in their soaked meal. The dogs apparently enjoyed it, but in three weeks' time the subject of this article showed oedema of the hind limbs—especially the ischiae and hocks—and a marked lameness in the left hind limb. The dog was very listless and had no appetite. All the following day—October 11th, 1935—the dog refused to leave his kennel. The limbs were still further swollen and the animal was unable to get up without help.

I was requested to see him on this day.

Examination.—The dog looked very dull and listless and would not attempt to move; he had to be lifted and carried off the bench. He was totally unable to stand and there was considerable oedema of both hind limbs. Other symptoms exhibited were as follows: respirations only slightly accelerated; temperature, 104° F.; pulse, irregular and intermittent, both in frequency and strength. The conjunctiva was dull red and congested. There was no offensive smell at the mouth.

Neither faeces nor urine had been passed that day. The latter was withdrawn by catheter and to the naked eye appeared normal. A sample was kept and sent away for examination—it showed traces of albumin.

Enemata were given and eventually the dog had a motion which consisted almost entirely of undigested beet pulp.

Diagnosis.—The condition was not specified by name, but I attributed it to over-feeding with beet pulp and advised that this be discontinued.

Prognosis.—Not favourable—basing it chiefly on the state of the heart.

Treatment.—Hypodermic injection of "Cardiatone" (digitalin, camphor, etc.) I bandaged the hind limbs as high up as possible with "Elastocrepe" bandages, these to be removed twice daily and the limbs massaged. I

*Cases communicated to the members of the North Wales Division, N.V.M.A., at a meeting held at Llandudno Junction, July 3rd, 1936.

prescribed two ounces of medicinal liquid paraffin every four hours and urotropine tablets thrice daily, with tinct. digitalis every six hours. Enemata three times a day. The diet was restricted to pure milk only.

Course.—Next day—*October 12th*—the dog did not show much improvement and the treatment continued.

October 13th.—The bowels were acting freely—the motion consisted entirely of beet pulp. When the hind quarters were raised by the tail the dog urinated and was just able to stand, but could not walk. It took milk voluntarily.

October 14th.—Temperature, 102° F., pulse more regular in frequency and strength. The oedema was disappearing. The bandages were left off during the day and the dog enjoyed chicken broth and milk.

October 15th.—Much better; able to walk, and all organs functioning normally. Temperature, 101 and pulse improving. Bandages discontinued.

The dog was kept on a light diet for a few days and eventually made a complete recovery.

On the 25th of the same month a message was received that a Labrador bitch was showing exactly the same symptoms and it was during that visit that the head gamekeeper admitted that he had not discontinued the beet pulp to the other dogs—he evidently did not agree with my opinion as to the cause of the trouble. Now, however, he demonstrated agreement in a very practical manner, by emptying the box containing the sugar beet into a fast-flowing river close by.

This second case recovered with the same treatment in six days.

The chief features of the two cases were (*a*) the effects on the heart and circulation; (*b*) lameness in the left hind leg which in the early stages the gamekeeper described as that leg "giving way."

No further cases have occurred.

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EXCESS OF WATER AS A CAUSE OF HAEMOGLOBINURIA

H. LLEWELYN JONES, M.R.C.V.S.,
Denbigh

Eight calves—ranging from five to seven months of age—had been reared indoors throughout last winter and they were in excellent condition.

On May 8th last I was called to see them as they were "passing blood in the urine." Whilst I was there, I saw four out of the eight doing so and the owner assured me that every one of them did the same. The calves otherwise appeared well—at all events, they were not showing any great constitutional disturbances.

To begin with, I was at a loss to account for the haemoglobinuria, but it must have been due to something of which they had all partaken in the way of food or drink.

The owner assured me that their food had not been changed for weeks, and that all they had to drink was equal parts of milk, skimmed milk and butter milk. I then asked him if they went out to water every day and his reply was that they had never been out of that loose box since Christmas—but on the previous day, *i.e.*, May 7th, he let them out into the farm yard where there was a drinking trough containing water from the same source as that which supplied his household and all the other neighbouring farms. The owner added that once they found it they all drank freely—so much so, that they "looked like balloons." This convinced me that it was this partaking of an excessive amount of water for the first time that caused the haemoglobinuria.

With mucilaginous drinks and fairly large doses of alkali (soda bicarb.) the trouble ceased in two days without any apparent ill-effects.

Mr. Harvey, of St. Columb, has recently related a similar case in the columns of the *Veterinary Record*. [In the account to which, presumably, our contributor refers (*V.R.* **48.** 20. 641.) Mr. Harvey writes of "Water Poisoning in Calves," but makes no mention of haemoglobinuria as a symptom. He quotes Rowntree's syndrome, which includes polyuria. Constitutional disturbance was great, nervous symptoms predominated, and three out of five affected animals died.—*Editor.*]

THE HIGHLAND PONY

"The Highland pony is a purely Scottish breed that has for some time been rather neglected," says the *Scottish Farmer*. "This to some extent may be due to the depression that for long affected the breeding of all types of horses, but now, with a better demand, attention is once again being directed to Highland ponies. The natural habitat of the breed is the crofting districts of Scotland and the islands. There undoubtedly, there is a place for it. In olden days it was something of a miniature Clydesdale, remarkable for its freedom from hereditary diseases, and specially valuable on account of its sound feet. These ponies were without an equal for work on the hills in the deer forests, and this probably accounted for the desire to develop the riding shoulder, as, in addition to carrying deer and game they were also used for carrying the shooters. In some quarters it is feared that the character of the breed is changing, weight and substance which were so useful for draught purposes being sacrificed in favour of the riding type. At Islay Show there were 14 ponies paraded in a new class specially provided for them, and of the 14 only two, including the champion, were anything approaching the old breed, but even these were a little deficient in freedom and straightness of action. To-day there are too many types and if something is to be done to revive the breed it would be well for the Breed Society to define the type or give some guidance as to breeding policy."

Abstracts

[Purification of Viruses.* Galloway, I. A.]

Until quite recently attempts to purify viruses have been based chiefly on their surface properties, which in general are very similar to those of other substances in a state of colloidal dispersion, *e.g.*, reversible adsorption on to surfaces of opposite electric charge and migration in an electric field. Separation by these methods is therefore extremely difficult, and the final product is invariably of low virus potency. Alternative methods have now been devised as a result of the knowledge acquired on the sizes of the different viruses, *viz.*, washing processes based on differential centrifugation and filtration.

By centrifugation methods preparations have been obtained of two of the largest viruses, those of vaccinia and psittacosis, largely freed from extraneous protein with little loss of potency. This method has also been applied with success to one of the larger bacteriophages, but cannot at present be used successfully for viruses smaller than 100 mμ. Suggestive evidence, however, is available now that with an improved technique it may become applicable even to very small viruses and phages.

Purification by filtration, *i.e.*, carrying out the washing on a membrane of suitable porosity, has a wider application and has been used with success for purifying enzymes, the agent of Rous-Sarcoma No. 1, bacteriophages and recently one of the smallest viruses, that of foot-and-mouth disease.

It is very necessary in physical-chemical studies to have at one's disposal virus preparations of high potency and freed from extraneous proteins. The apparent exceptional resistance of the virus of foot-and-mouth disease to certain physical and chemical agents can be explained by the protective action of the serum proteins in the vesicle lymph. Only by examination of purified preparations can the antigenic properties of viruses be satisfactorily estimated. The viruses of vaccinia and psittacosis have been studied in this way, and similar experiments are being made with the virus of foot-and-mouth disease.

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[The Affinities of Yellow Fever Virus for Various Tissues of Several Experimental Animals.* Theiler, Max.]

All the strains of yellow fever virus so far isolated and studied (22 in number) possess neurotropic affinities and as a rule produce encephalomyelitis in mice when injected intracerebrally. The infection with this virus in mice is confined to the nervous tissues. In addition to its inherent neurotropic property, the virus of yellow fever also produces a generalised systemic infection in rhesus monkeys, with a selective localisation in the liver. By brain-to-brain passage in mice, the virus gradually loses its viscerotropic property; that is, a highly virulent virus becomes converted into a relatively avirulent one. A comparative study of the course of infection in rhesus monkeys inoculated with unmodified virus as well as with the mouse virus shows that the viscerotropic virus multiplies chiefly in the liver, whereas the neurotropic virus produces only a mild systemic infection in which the virus multiplies in the lymphoid and haemopoietic tissues without selective localisation in the liver. Occasionally monkeys inoculated extraneurally with the modified virus develop, after a mild systemic infection, an encephalomyelitis which in spite of the presence of demonstrable protective antibodies in the blood proves fatal. In such animals the virus at death is confined almost entirely to the nervous tissues.

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[Louping-ill, a Virus Encephalomyelitis of Sheep.* Gordon, W. S.]

Until recent years, the pathogenic filterable viruses have generally been classified according to the *post-mortem* pathology of the diseases which they cause. By this method the virus of louping-ill would fall into the neurotropic group, since, in the final stages of this disease, the essential pathology is that of an encephalomyelitis. Louping-ill, however, is not exclusively a disease of the nervous system, especially from the outset. The natural mode of transmission is by the bite of infected ticks, the vector being *Ixodes ricinus* (L.). In the early stages of infection the virus probably multiplies in the blood and spleen. Invasion of the central nervous system by the virus occurs at a late stage in the infection, and is responsible for the characteristic symptoms of the disease. Accordingly, its classification as a pantropic virus, type 2 (Hurst), is to be preferred to that of a neurotrope.

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[Paths of Infection with Certain Viruses. Effect of Adsorption on Alumina.* Ørskov, J.]

Two strains of fowl-plague virus, studied with S. Schmidt, possessed nearly the same virulence for fowls, but not for mice. One strain killed mice regularly in dilutions of 1-50,000 by the subcutaneous route, while the other strain did not kill them even in dilutions of 1-10. A systematic study of the distribution of the virus in the blood and the organs yielded results similar to those obtained with several pathogenic bacteria.

The generalisation of virus adsorbed on $Al(OH)_3$ was slower and less pronounced, and this fact probably contributes to the efficacy

*Abstracts of communications made to the Second International Congress for Microbiology, London, July 25th-August 1st, 1936.

of the virus-A1(OH)$_3$ suspensions as vaccines.

The mechanism of infection in foot-and-mouth disease is more difficult to follow on account of the rapidity with which the disease develops in guinea-pigs, and we have not as yet obtained a clear impression of the different stages of the development of the disease. One striking feature which has been recorded by the British Commission is that in the early stages of the disease the virus can often be demonstrated in the blood, but not in the liver and the spleen. After a subcutaneous inoculation of a suitable dose of virus adsorbed on alumina, the generalisation of the virus is greatly retarded and the virus is inactivated *in situ* within a few hours. If, after the inactivation is completed, the site of inoculation is excised, ground up, suspended in a fluid and re-injected in new guinea-pigs, the latter are actively immunised.

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[Present Knowledge concerning Viruses as a Cause of Tumours.* Rous, Peyton.]

Tumours are not infectious under natural conditions. To cause them an extraneous agent would have to possess remarkable properties. When we consider the viruses in this connection we deal with agents whose potentialities are only partially apprehended.

It is known that viruses produce disease through an intimate association with tissue cells; and of such cells tumours are made. It is also known that some viruses cause cells to multiply; and through cell multiplication tumours arise. Cells, not the animal body, are the true hosts of the viruses, fostering and even protecting them. These facts bring the possibility near that an association of viruses with cells is responsible for some of the neoplastic diseases; and actually a tumour of the frog and numerous tumours of the domestic fowl have proved to be due to viruses. The growths of the fowl are typical neoplasms in their appearance and behaviour, and in the no less important respect that they are uninfective under natural conditions and sporadic in incidence. Where and how the causative viruses exist when not producing them is problematic, but it is known of some other viruses that they reside in the body and only exceptionally cause disease.

Evidence that viruses can give rise to tumours in mammals is not wanting. The wild rabbits in the mid-west of North America frequently carry on their skin papillomas which are caused by a virus; and these growths, though manifestly infectious in aetiology and incidence, exhibit the immediate traits characterising tumours as a class. In domestic rabbits the virus produces notably vigorous papillomas, and these frequently become true, metastasising cancers. The discovery that a virus can cause a tissue disturbance out of which cancer arises has little importance in itself, for many, highly various, agents are carcinogenic in this way. But the rabbit virus produces papillomas that are themselves often on the brink of malignancy, that resemble the papillomas of undetermined cause occurring in other species, and that undergo the same changes as do these latter when they become cancerous. Numerous facts attest to an influence of the rabbit virus on the cancers. It does more than serve as their primary cause, it determines their time of occurrence, their character and, to no inconsiderable extent, their form. Yet neither this virus nor one antigenically related to it is responsible for the other rabbit tumours thus far tested; and the eventual cancerous change is not merely an enhanced, virus-induced papillomatosis, but the expression of some further alteration. This can be greatly hastened, yet under natural conditions it is preceded by a "pre-cancerous" period like that observed in carcinomas generally. In interpreting these facts one must remember that the virus-induced papillomas and the cancers deriving from them are alike the outcome of the interaction of two elements, namely, the virus and the epidermal cell that it affects. After the two have become associated, either may alter or be altered secondarily, thus influencing the other and the character of the neoplastic process in due course.

Viruses are the most direct causes of tumours that are now known and the only agencies that bring them about, continue to actuate them and determine their character and course. One can readily explain all tumour phenomena in terms of what is known of viruses. Yet it does not follow that the generality of tumours are actually caused by these agents.

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[Viruses in the Aetiology of New Growths.* Furth, J.]

The discussion is based on studies of neoplasms (leukosis and tumours) in mice and chickens. Chicken leukosis and tumours are produced by viruses; the known strains of mouse leukemia and tumours, according to the available evidence, are not.

There are numerous viruses that produce in chickens either sarcoma or leukosis or both. Accordingly, they may be classified as simple and complex oncogenic viruses. The six different viruses isolated in our laboratories retained their characteristics throughout varied experimental conditions during a period of two to seven years. They range from some which yield free virus in abundance to one in which the presence of virus can be shown only with difficulty. Evidence for the existence of transmissible virus-free chicken tumours is wanting.

*Abstracts of communications made to the Second International Congress for Microbiology, London, July 25th-August 1st, 1936.

It is probable that viruses mutate, but this has yet to be proved. The transmissibility or virus aetiology of chicken carcinoma awaits further evidence.

The existence of complex viruses is indicated by tissue culture studies. Our chicken sarcoma 13 retained its ability to elaborate a virus causing leukosis and sarcoma after 122 days *in vitro*, while simple leukosis viruses perish *in vitro* within a few weeks in the presence of sarcoma cells or fibroblasts of blood-forming tissues. Multiplication of the viruses studied was obtained *in vitro* only in the presence of living cells that they have stimulated to neoplastic growth.

Many neoplasms of mammals are probably not produced by a virus, *e.g.*, those which arise in X-rayed ovaries of mice one-half to one and one-half years after irradiation, and which can be traced to the regenerative changes that follow X-ray injuries; or the breast tumours that are dependent on ovarian hormonal activity.

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[**Viruses in Non-filterable Tumours.*** Andrewes, C. H.]

Few will deny that the essential agent in the etiology of filterable neoplasms is a virus. It can be shown that a virus is also concerned in, at any rate, some non-filterable tumours.

(1) Rous sarcoma No. 1 and Mill Hill 2 fowl endothelioma pass through phases in which, for many months, all attempts at filtration fail. Yet the virus has not disappeared, for filterability is ultimately regained.

(2) The Shope rabbit papilloma is filterable in its earlier stages; but later, when the growth has become frankly malignant, propagation by means of cell-free material fails. But continued presence of the virus can be demonstrated indirectly; for Rous and his co-workers have shown that rabbits in which grafts of the now unfilterable tumour grow, develop in their sera antibodies which neutralise the papilloma virus.

(3) Like Peacock and others, the author has failed to filter fowl sarcomata induced by tar and dibenzanthracene, but he has been able with one such fowl tumour (the Sheffield tar sarcoma of Mellanby) to show by indirect means that a virus is present. Cells from this tumour inoculated into pheasants grow for 1-2 weeks, sometimes longer; ultimately regression always occurs. Such pheasants develop antibodies which neutralise Rous sarcoma virus. (The author has shown previously that viruses of histologically distinct tumours may be closely related serologically.) It can be demonstrated that this neutralisation is not caused by anti-fowl properties in the sera. It is deduced that this non-filterable fowl tar sarcoma contains a virus, closely related serologically to Rous sarcoma virus, but not directly demonstrable by filtration of the tumour. Possibly some tumour-viruses are unable to infect normal cells.

Review

[**"Handbook for Veterinary Surgeons."** By Fred Bullock, LL.D., Barrister-at-Law. Third Edition. Baillière, Tindall and Cox, 7 and 8, Henrietta Street, London, W.C.2. Obtainable also from the author at 10, Red Lion Square, London, W.C.1. Price 7s. 6d. net.]

The third edition of Dr. Bullock's "Handbook for Veterinary Surgeons" first published in 1927, with a second (revised) issue in 1930, has recently been produced.

The work has been considerably enlarged, reaching to 302 pages, as compared with 190 pages in the second edition.

The subject matter has been rearranged, and some new chapters added which bring this book into conformity with the syllabus for the subject of Jurisprudence as laid down for the fifth professional examination of the Royal College of Veterinary Surgeons. It will be most useful as a text-book for students preparing for this examination.

A particularly valuable addition will be found in the chapter on Procedure in Courts of Law. Here, not only is there provided sound advice on the giving of evidence, such as any veterinary surgeon may find himself called on to furnish, but Dr. Bullock has, in a most readable manner, lifted the veil of mystery which for most laymen surrounds the various types of courts, and the whole procedure in the conduct of a case from the time when the veterinary surgeon gives to a solicitor to one or other of the parties a summary of what he is prepared to say. Dr. Bullock rightly lays stress on the caution which should be observed to avoid making statements which cannot afterwards be substantiated: especially in such cases as involve an opinion on the duration of an illness—*e.g.*, heart disease "of long standing," or roaring which "must have been evident when the horse was examined three months ago."

Although the book will probably be adopted as a text-book for students, it was primarily designed by the author as a guide, philosopher, and friend to the practising veterinary surgeon. Every member of the profession should possess a copy, for there is hardly a difficulty which can present itself for which he will not find a satisfactory solution therein.

It is possible that there may be some difference of opinion among experienced veterinary surgeons regarding certain technical points referred to by Dr. Bullock. Examinations for soundness, for example, will probably always be a subject of such difference. One might infer from reading this book that a certificate of soundness is like a perpetual sword of Damocles over the head of the examiner. In several places it is suggested that a horse

having received a certificate as sound may subsequently be found to be lame, with dire consequences to the examiner. It is less clearly shown that the certificate only refers to the time of examination, and is the opinion of the examiner. If, therefore, " A " examines a horse on the 1st and gives his opinion that it is sound, he need not be in the least disturbed if " B " examines the same horse on the 2nd, 3rd, or some subsequent date and certifies that in his (B's) opinion it is lame. The point to be emphasised is that *all* examinations should be conducted with reasonable care.

Again, some busy practitioner may be alarmed at the form of examination for lightning stroke on pages 107 to 110. Seeing that the practitioner has to make his living and will probably receive a very limited number of shillings for the examination, it may be doubted whether he can afford the time, even if he has the ability, to make an exhaustive examination of all the minutiae concerned. One may assume that this is not intended to be followed too literally, but rather is meant to indicate that in all cases of this kind where precise evidence is difficult to obtain, some definite system should be adopted to safeguard the examiner against error, so far as is reasonably possible.

Such points of criticism, even if justified, should not detract from the value of this work, which can be recommended to the careful perusal of every member of our profession.

EXPORT OF LIVESTOCK TO JERSEY

The Ministry of Agriculture and Fisheries has been notified by the Greffier, Greffe Office, Jersey, that the Committee of Piers and Harbours has decided to allow by special permit the importation into Jersey of sheep, goats and pigs, for breeding purposes only, from the counties of Cornwall, Devon, Dorset and Hampshire. Prior to importation, application must be made to the Committee for a Permit, the district of origin of the animals and the proposed port of shipment being stated in such application.

In cases where Import Permits are granted, animals must be accompanied by a certificate of health and origin; swine over six months old must also be accompanied by a certificate showing that they have been treated with tuberculin by the intradermal method and found free from tuberculosis. All animals will be subject to veterinary examination before disembarkation is permitted and are liable to be isolated under the supervision of the Island Veterinary Inspector after disembarkation.

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The tannic acid treatment of burns was originally advocated for use in severe, extreme cases. F. Taylor (*J. Amer. Med Ass.*, 1936, **106**, 1144) finds that many of the islands of germinal epithelial cells which otherwise might help in the healing of the denuded area are also "tanned" by the treatment. The use of ferric chloride appears to offer the same objections. The author suggests that bland wet dressings and ointments should be used on the great majority of "second degree" burns, and that coagulation treatment should be reserved for the most severe cases.

N.V.M.A. Divisional Reports

NORTH WALES V.M.A.*

MEETING AT LLANDUDNO JUNCTION

A meeting of the above Division was held at the Station Hotel, Llandudno Junction, on Friday, July 3rd, 1936, at 2.15 p.m. The President, Mr. H. Llewelyn Jones, occupied the chair, and there were also present Messrs. Cartwright, Edwards, H. V. Hughes, W. O. Jones, R. L. Lewis, G. J. Roberts, J. Ll. Williams and Wynne.

Apologies for absence were received from Mr. Cane, Professor Craig, Principal Hobday, Dr. Montgomerie, Mr. W. T. Rowlands, and Professor Share-Jones.

The minutes of the meeting of March 6th were read and confirmed.

Obituary.—The President referred to the loss which the Division had sustained in the lamented death of Mr. O. C. M. Kay. Mr. Kay had only recently joined the society but his enthusiasm and upright manner had endeared him to all. He understood that the Secretary had conveyed a message of condolence to the relatives on behalf of the members and had attended the funeral, but he would ask them to rise as a tribute to the memory of their late colleague. The members then stood in silence.

Correspondence. — (1) From the National Horse Association, requesting a renewal of the Society's subscription. It was agreed to subscribe £1 1s. 0d. for the year 1936.

(2) From the Victoria Veterinary Benevolent Fund, submitting the Annual Report. This showed that the Society had subscribed £4 4s. 0d. to the Fund for the years 1934 and 1935 and had contributed £2 6s. 6d. in the way of collections at meetings held during 1935. It was agreed to subscribe £2 2s. 0d. to the Fund for the current year.

(3) From the Secretary of the N.V.M.A., requesting the names of the members nominated to serve on the N.V.M.A. Council. It was agreed that Professor Share-Jones and Mr. E. P. Edwards be re-nominated to serve on that body.

(4) From the National Association for the Prevention of Tuberculosis, inviting the Society to appoint a delegate to the Association's Congress. It was agreed that the President, or his nominee, should represent the Division.

R.C.V.S. Library.—The Hon. Secretary raised the question of a subscription to the R.C.V.S. Library Fund, a matter which had been deferred at a previous meeting. It was agreed that the Society contribute £2 2s. 0d. for the current year.

*Received for publication August 12th, 1936.

Election.—Mr. F. H. Manley, M.V.Sc., M.R.C.V.S., having been nominated at the last meeting by Mr. J. N. Bowen and the Hon. Secretary, was unanimously elected a Fellow of the Society.

Paper.—The President then called upon Mr. Lewis to read his paper on "Malignant Catarrh in Cattle" to the meeting. [This contribution to the proceedings is reproduced in the General Articles Section of this issue.—*Editor.*]

An interesting discussion on the points raised by the essayist ensued, most members taking part, and on the proposition of the Chairman, seconded by the Hon. Secretary, a hearty vote of thanks was accorded to Mr. Lewis for his valuable paper.

Clinical Cases.—The President then brought forward the following clinical cases: (1) Circulatory disturbances in retrievers fed on beet pulp; (2) Excess of water as a cause of haemoglobinuria. [Mr. Llewelyn Jones's account of these cases is transferred to our Clinical Section.—*Editor.*] These cases, together with a specimen of fractured humerus in a horse brought by Mr. Jones-Roberts, were considered by the meeting.

Next Meeting.—It was agreed that the next meeting be held at Rhyl in November.

The proceedings having terminated, the members were entertained to tea by Mr. and Mrs. W. O. Jones. Mr. Cartwright, on behalf of the gathering, expressed his gratitude to Mr. and Mrs. Jones for their kindness.

Howel V. Hughes, *Hon. Secretary.*

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DUMFRIES AND GALLOWAY V.M.A.*

SUMMER (SOCIAL) MEETING AT PENRITH

The Summer (Social) Meeting of the above Division was held at Penrith on Thursday, July 2nd, when the President, Mr. Scott, occupied the chair.

The following members were present: Messrs. Adam Gibb, Wm. Toppin Hewetson, A. J. Kennedy, W. L. Mackenzie, A. J. Milligan, R. E. Murison, John Reid, Wm. Scott, R. Simpson, Tom W. Woodhead, A. Young (Hon. Secretary). Messrs. — Fraser, Appleby; Wm. A. Milligan, Dorset; and Geo. Charles Webster, Lancaster, attended as visitors.

Apologies for absence were received from Miss E. Burnett, Messrs. John Cameron, F. A. Davidson, G. D. W. Davidson, Dr. Dryerre. Mr. A. Edgar, Dr. Greig, Messrs. W. Watt, D. Wyper, and W. Jackson Young.

The minutes of the previous meeting, having been published in the *Veterinary Record*, were approved and taken as read.

Correspondence.—The Secretary intimated that, as requested at the last meeting, he had written to the North of England, West of Scotland and Ayrshire Divisions, regarding fees for tuberculin testing of cattle. He had a letter from the Secretary of the West of Scotland stating that, as fees for testing were to be considered under the Attested Herds Scheme, it would be advisable to wait until such fees had been definitely settled, as these would act as a standard. The Hon. Secretary added that acknowledgment of the letter had been received from the Secretary of the Ayrshire Division, but no reply had been forthcoming as yet from the North of England Division.

Letters were read from the Secretary of the N.V.M.A. regarding schemes for the treatment of the sick animals of the poor and the secretary was asked to communicate with the Local Secretary of the R.S.P.C.A. and the S.S.P.C.A. intimating the willingness of all the members of the Division to co-operate in any scheme agreed upon.

Notice of motion was given by Mr. Milligan "That the Entrance Fee to this Division of £1 1s. 0d. be abolished and that the Annual Subscription of £1 1s. 0d. remain as previously."

After the adjournment of the meeting the members met for lunch and were joined by the lady visitors—Mesdames Scott, Young, Thomson, Sangster and Miss Hewetson.

Lovely weather favoured the party in the afternoon, when they motored to the Lake District and spent a delightful time. Some of the party went boating, while the others admired the beautiful surroundings and the Ullswater Hotel grounds and gardens where, later, Mr. and Mrs. Scott entertained the members and their friends to tea. All those present were warm in their praise and thanks to their hosts for having arranged so delightful an outing.

George A. Sangster, *Hon. Secretary.*

*Received for publication August 13th, 1936.

NICOTINE INTOXICATION IN SUCKLINGS

It has been shown that when a cat was injected with nicotine during lactation, the nicotine was extracted in the milk, and that less milk was secreted. Several observers have found nicotine in the milk of mothers who smoked cigarettes, but nothing wrong with the infants. A mother's smoking of six to seven cigarettes a day has been reported to have no effect on the baby, but toxic symptoms were observed when she had as many as fifteen. I. Greiner (*Jahrb. f. Kinderheilk,* 1936, Feb., 131) records the case of an infant, aged eleven days, whose mother was smoking from 35 to 40 cigarettes a day, and which suffered from restlessness, vomiting, diarrhoea, followed by constipation and sunken fontanelle; the mother was ordered to stop smoking, and the infant rapidly recovered.—*British Medical Journal.*

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The number of bulls registered under the Ministry of Agriculture's livestock improvement scheme in the two years ended July 31st, was 58,200. Bulls rejected numbered 8,200.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Sept. 7th.—N.V.M.A. Committee meetings, at 2, Verulam Buildings, Gray's Inn, W.C.1: Organising, 12 noon; Finance and General Purposes, 2.15 p.m.; Editorial, 4.30 p.m.

Sept. 8th.—Meeting of the N.V.M.A. Special Committee on Free Services, at 2, Verulam Buildings, Gray's Inn, W.C.1, 11.30 a.m.

Sept. 14th-18th.—N.V.M.A. Annual Congress, Scarborough.

Sept. 17th.—Annual Meeting and Dinner of the Royal (Dick) Veterinary College Alumnus Association, at Scarborough, 6.30 p.m.

Sept. 21st, 22nd.—Jubilee Memorial Bursary Examination.

Sept. 29th.—Meeting of the Southern Counties Division, N.V.M.A., at Aldershot, 3 p.m.

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N.V.M.A. CONGRESS AT SCARBOROUGH

Railway vouchers, enabling holders to attend the Scarborough Congress at reduced fares, are still available on application to the General Secretary, N.V.M.A.

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PERSONAL

Appointments.—At a meeting of the Diseases of Animals Committee of the Gloucestershire County Council, held at the Shire Hall, Gloucester, on the 17th ultimo, the following were appointed as whole-time Assistant Veterinary Officers: Messrs. H. E. C. Ham, M.R.C.V.S., F. J. Hill, M.R.C.V.S., D.V.S.M., J. H. McGhee, M.R.C.V.S., and G. G. McLaren, M.R.C.V.S.

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Birth.—Armfield. To Ray and J. M. Armfield, M.R.C.V.S., at the Lady Rodwell Nursing Home, Bulawayo, South Rhodesia—a daughter, named Helen Janet Watson Maxwell.

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Marriage.—Llewellyn-Jones—Shedlock. At St. Mary's-le-Strand, on August 31st, Dr. Llewellyn-Jones, of Harwarden, Chester, to Kathleen W. Shedlock, M.R.C.V.S., of Esher, Surrey.

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TYPHOID INFECTION FROM MILK

Official assurances were forthcoming on Friday of last week from public health departments in Bournemouth and Poole that the outbreak of typhoid fever in those towns and at Christchurch had definitely been checked, and that the danger of the outbreak becoming more serious was very remote. The source of infection was discovered the previous Friday, and adequate precaution was immediately taken to make certain that no further infection came from that source, which was a certain milk supply. It is understood that the total number of cases in a population of visitors and residents of over 300,000 was approximately 150 in the three towns. As a precautionary measure housewives in the district were asked to make certain that their milk had been pasteurised or boiled.

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LEGAL NOTES

Tuberculosis Order Prosecution.—A case described by the Chairman of the Bench as a very serious one was heard at Horsham Petty Sessions recently, when Kenneth Collins, of Toat Hill Farm, Slinfold, was summoned for failing to notify his possession of a cow suspected of tuberculosis. The defendant pleaded not guilty.

Superintendent E. M. Savage said that he and P.-s. Trott visited the farm to inspect the cattle on August 8th. After they had been shown some cattle he asked the defendant if there were any more animals. The defendant replied that there were none, and later assured him twice that he had seen all the animals. On walking to the buildings the superintendent saw a cow alone in a field, and it was in an emaciated condition.

As they walked through the gate the defendant said: "Oh, I forgot that one; she has been rearing a bull calf." The cow was lying on the ground and the superintendent stated that the animal was emaciated and weak, especially in the hind quarters. She walked four paces and started to cough violently, and continued to do so until he got her into the farm buildings.

The superintendent added that he remarked: "Surely you knew that this cow had symptoms of tuberculosis, for if I do as a layman, who knows nothing about cattle, surely you should have known?" Defendant replied, "That's the first time I've heard her cough. I knew she was wrong in one quarter." Witness stated, further, that he served defendant with the form relating to this particular animal and told him he must keep her isolated from the others and that if she was isolated in the same way as he found her, that would be in order. He communicated with Mr. Campbell, a veterinary surgeon, and returned the same afternoon, where, instead of the instructions on the form being carried out, he found the cow mixed with others going into the stall.

Photographs were taken by the veterinary surgeon, and the animal was then slaughtered. A *post-mortem* examination was held and showed that the cow was suffering from tuberculosis, not being advanced within the terms of the Tuberculosis Order.

Mr. A. D. Campbell, M.R.C.V.S., giving evidence, stated that both lungs of the animal were a solid mass of tuberculosis and other parts of the animal also showed signs of the affection.

The defendant denied knowing that the cow had tuberculosis until the superintendent ran her down the field. The cow had been rearing a bull calf in the field and was passed by the county veterinary surgeon on June 9th, when he examined defendant's whole herd. The cow had not been milked since having calved. The defendant also produced a veterinary surgeon's certificate to show that the cow was not suffering from advanced tuberculosis within the meaning of the Order.

The defendant was fined £10 and ordered to pay £2 costs and the veterinary surgeon's fee. The defendant asked if he might appeal, and was told that he could do so.

Unsound Meat: Summonses at Guildhall.—Summonses were heard at the Guildhall Justice Room recently, before Mr. Alderman Pollitzer, which alleged that George Howard Purser, a pig dealer, of Glebe Avenue, South Ruislip, was the owner of a pig carcase which was deposited in the Central Markets, Smithfield, for sale, and which was seized and condemned as unfit for human consumption. John Hall, cattle dealer, of 48, Shaftesbury Avenue, Harrow, was alleged to have "aided and abetted him" in the offence.

The case was opened by Mr. W. E. J. MacDonnell, Assistant City Solicitor, on behalf of the City Corporation. He said that the pig carcase weighed, without the head, which had been cut off, 345 pounds. The meat salesman to whom it was consigned by Purser was suspicious of it, and called in the City Sanitary Inspector, who, after examination, took it away, and it was finally ordered to be destroyed. Purser was communicated with, and he came to London, where he saw the carcase, and admitted that it was his. He made the following statement to Mr. L. Grace, the veterinary surgeon to the City: "I bought seven pigs from Mr. Hall without seeing them, but thinking that they would be sound. After they were slaughtered they were sent to a meat salesman, in the Central Markets, Smithfield, for sale."

Mr. Percy Schofield, Sanitary Inspector to the Urban Council of Harrow, said that Hall called at his private address and told him that seven pigs had been slaughtered, and that the head of one of them had been removed because of its diseased condition. He did not examine those pigs.

Cross-examined by Mr. Matthew Arnold, solicitor for Hall, Mr. Schofield said that at times the heads of pigs were cut off when they were diseased, and if the other part of the body was all right it was allowed to be sent to the markets.

Mr. MacDonnell: But is it not a Ministry of Health regulation that all carcases that have had the heads removed should be split and examined before they allowed to be sent to market?

Mr. Schofield: It is not a regulation, but a recommendation; I did not carry it out: it is not always done.

The defendant Purser said that he sold about 20 carcases to Leon Bridgman, but he never saw the animals alive, and did not know who packed them for London.

Hall, on oath, said that he sold the seven pigs to Purser's brother. He saw some of them slaughtered, and knew that the head of one was removed because of its diseased state, but thought that the carcases were subsequently examined by Mr. Schofield, and passed as being fit for food. He had lost about £130 over the one deal from Purser.

The Alderman: The City Magistrates regard these offences in a very serious light indeed. They are determined, as far as possible, to stamp out offences of that nature by the imposition of heavy penalties. The general public have to be protected from unclean meat, and I shall fine each defendant £25 and five guineas costs.—*Meat Trades Journal.*

* * * * *

BRITISH CATTLE FOR IRELAND

The Irish Free State Department of Agriculture announces that in view of the continued freedom of Great Britain from foot-and-mouth disease it has been decided to relax the existing regulations from that country as from September 8th.

Applications will be considered for permission to import, under certain conditions, ruminating animals and swine direct from farms in any part of Great Britain to farms in the Free State.

LIVESTOCK IN NORTHERN IRELAND

Outstanding features of the Northern Ireland agricultural returns for 1936 are the continued increases in the numbers of sheep, pigs and poultry, each of which establish new high records. All classes of cattle show a decline in numbers as compared with 1935; milk cows fell from 252,297 to 249,802, but this figure is still greater than in any year from 1929 and 1933. The number of heifers in calf has fallen from 27,339 last year to 25,128; cattle recorded—769,663—although 29,588 fewer than in 1935, exceed those of any year since 1922. The number of sheep has increased by 16,450 in the year to 834,754, a record for Northern Ireland, while the number of pigs recorded has for the third successive year established a record. For the first time the pig population exceeds half a million, the number recorded being 521,255, an increase of 63,377 or 13·8 per cent. compared with last year. The number of sows rose from 47,436 to 56,467, which is the greatest number on record. For the first time the number of poultry exceeds ten-and-a-half million, the increase being due entirely to the greater number of ordinary fowls. Turkeys, geese and ducks are all fewer than they were a year ago. Agricultural horses numbered 81,294, a fall of 1,977 on the year, but there was an increase of 13·7 per cent. in the number of unbroken horses.

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ATTESTED HERDS SCHEME

"The revised Attested Herds Scheme, which was to have been introduced in October last year, will remain shelved so long as producers of tuberculin tested milk are exempt from provisions of the Milk Marketing Scheme," states the *Farmers' Weekly.*

"Owners of Attested Herds market their milk under the Milk Scheme and receive a bonus of one penny per gallon. Additional financial inducements are to be offered under the revised Attested Herds Scheme, but it is considered that these will not be sufficient to encourage T.T. milk producers to obtain certificates of attestation, which bring them under the control of the Milk Board.

"Proposals for bringing T.T. producers into the Milk Scheme are now being discussed by the Board and the T.T. Milk Producers' Association."

* * * * *

NATIONAL COLLECTION OF TYPE CULTURES

Many species of bacteria and micro-fungi have been added to the National Collection of Type Cultures of micro-organisms during the past five years, and the fourth edition of the catalogue, issued by the Medical Research Council, is enlarged to 143 pages. The nomenclature of that important group of food-poisoning organisms known as Salmonella occupies nine-and-a-half pages in the catalogue.

Attention is directed by the council to the continued need for the deposition of newly described species and also for fresh examples of types at present in the collection.

* * * * *

The International Conference of Agricultural Economists is being held at St. Andrews in the first days of September, this being the first visit of the conference to Scotland. Official receptions are being given to the conference by the Ministry of Agriculture and the Department of Agriculture for Scotland. Mr. Walter Elliot, Minister of Agriculture, attended the Ministry's reception to the delegates.

A di-cephalic calf is being reared by Mr. J. Toon, dealer, of Marsh House, Thornborough, near Coalville, Leicestershire. The animal has three eyes. It drinks one gallon of milk daily, and is very healthy.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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EXAMINATION FOR SOUNDNESS: CARDIAC ABNORMALITIES

To the Editor of the Veterinary Record

Sir,—With reference to the recent letters on abnormal hearts, I am wondering if any member could tell me the cause of the abnormal sounds I have heard when examining a cart-horse's heart.

The sound can be reproduced if one lays a half crown in the palm of one's hand, and then hits this coin with the edge of another half crown. It is a metallic sound that can be heard at least six or seven yards away, and was produced only after violent exercise, but died away after a few moments' rest.

At rest auscultation revealed murmurs which obscured normal heart sounds, and the pulse was irregularly intermittent. There was extensive oedema under the chest and abdomen. The horse was unable, of course, to do any work.

I have heard similar sounds in another cart-horse's heart, some years ago, and as far as I remember, the case was identical to the above.

Yours faithfully,
K. A. Miles, M.R.C.V.S.

Hillside,
Leicester Road,
Market Harborough.

August 28th, 1936.

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RUS IN URBE

To the Editor of the Veterinary Record

Sir,—Here, in rural Australia, after many days, has come the *Veterinary Record* of May 30th, in which you quote the *British Medical Journal* in its lamentation over a stiff-necked generation that refuses to admit the omniscience of orthodox medicine in the matter of cow's milk and its relation to human health.

Some of this reads oddly here, where the people know little and care less about the hygiene of milk, and health and vitality compare more than favourably with those of Britain and the United States.

This comparison applies to the cities as well as to the rural areas. Brisbane, for example, where milk is left to take care of itself, makes a much better statistical showing than Chicago in all but homicidal respects.

One may observe that the *B.M.J.* writer, in his enthusiastic reference to the milk-hygiene of Chicago, imperilled the serious study of his text, because the meticulous care of human life in this city from the lacteal angle is almost comically different from its other and better-known activities.

Speaking as a scribe who has long left the green-shaded lamp for actual observation of the phenomena of life under natural conditions in many countries, I have good reason to warn my London friends against an undue admiration of the biological conditions of the United States. I affirm that the biological conditions of Australasia and of Western Canada are better, and appeal to the vital statistics of the several countries as my proof. I would further presume to urge our distinguished contemporary to differentiate clearly between the milk-supply of cities and the milk consumed by country people in the country or the smaller towns.

There is a marked tendency to-day in academic and literary circles for scientific and other writers to develop what may be called an urban or metropolitan view of a question. Such an urban view is clearly displayed in this article in the *British Medical Journal*. It may be medically correct in the modern city to envisage and treat mankind somewhat as men now envisage and treat poultry, on the intensive American system: that is, to protect every human being from extremes of temperature or even from variations in temperature, to exclude germs or viruses, and to measure out the food in sterilised, syntheticised, portions. That, roughly, is the American conception of preventive medicine which we are asked not to resist but to adopt and to enjoy.

The vital statistics and the vitality of the Western Canadians and the Australasians seem to show, however, that there is still another and a better way of avoiding disease and death, while enjoying life. So far, in these countries, the doctors have left the countrymen alone to use the milk of his herds after the manner of his fathers. By such natural means his physiological defence-mechanism has been exercised and his blood has kept its vitality. My observations convince me that this factor of vitality is a real thing and not just a piece of idealism. Yesterday I saw a team of country lads from this small Queensland town play an all-English Rugby League visiting team and nearly beat them. Last time the English team came here Toowoomba did beat them, but yesterday the visitors won by two points. I do not think one could find in Britain or America a small town team which could beat an international pack from Australasia or even hold its own. It is not, of course, only or mainly, a question of milk. It is a question of the resources of Nature and milk is one of those resources.

For my part, though I yield to none in my love of science and try to rule my life by scientific standards, I am well content to share with these hearty Australian country people, as I have done in many rural places since childhood, the abundance of fresh raw milk that is brought into the house every day from cows that are not often inspected and from byres that know no sanitation except that of the sun, and the wind, and the rain. It seems to me that there is a scientifically true mean somewhere between the complete hygienic neglect of savages and the ultra-sophistication of modern America, and that such a mean is still the best way of life for mankind. It is best exemplified to-day in Australasia away from the great cities.

Yours faithfully,
Wakefield Rainey.

c/o Union Bank of Australia,
Toowoomba,
Queensland.

July 9th, 1936.

N.V.M.A. Congress, Scarborough, 1936

EPIDURAL ANAESTHESIA IN BOVINES AND EQUINES

For the guidance of members attending the demonstration of the above to be contributed by Professor T. G. Browne to the series of demonstrations and operations on Tuesday next, September 15th, at the N.V.M.A. Congress at Scarborough, we reproduce a selection of the illustrations published in connection with Dr. Geoffrey B. Brook's article on this subject, printed in the *Veterinary Record* in certain issues from May 11th to June 8th, 1935.

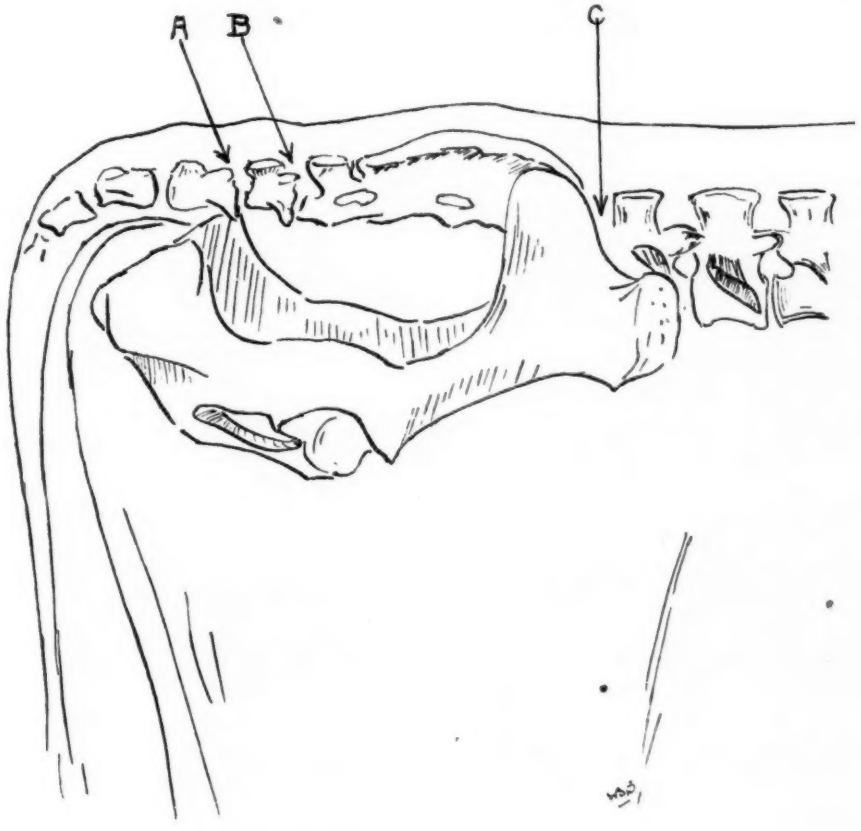

Fig. 8.—Pelvis and posterior spine in relation to the contour of the animal.

A and B = Sites of puncture for posterior or anterior anæsthesia.

C = Site of injection for sacro-lumbar anæsthesia.

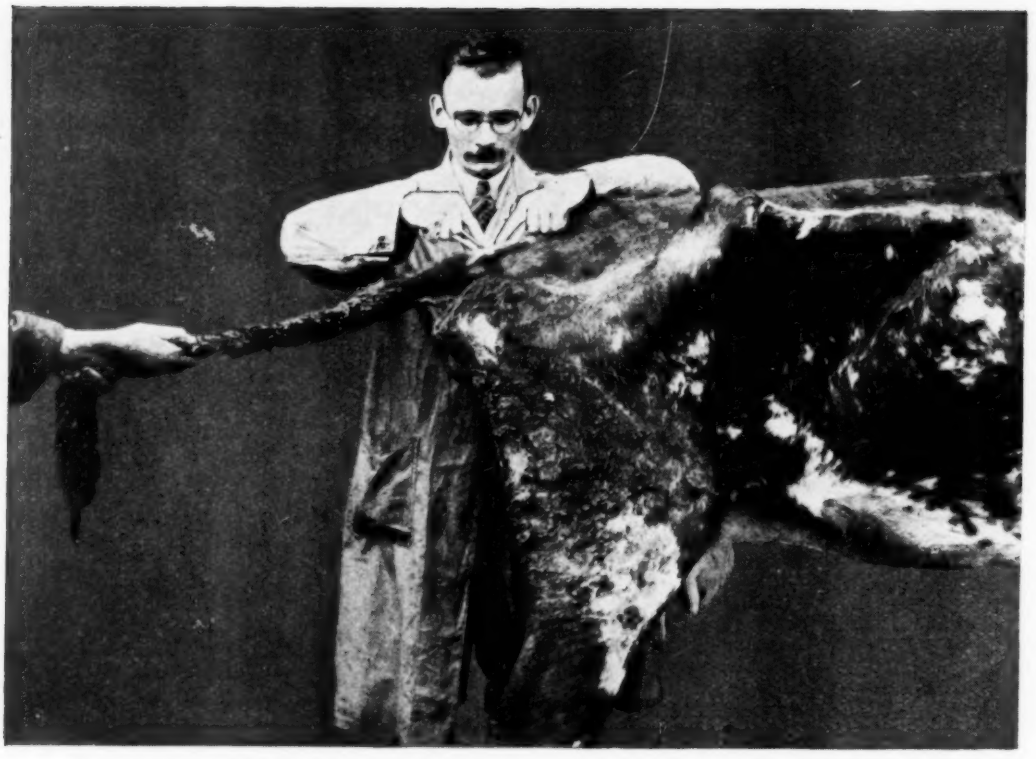

Fig. 9.—Position of Operator during insertion of the Needle.

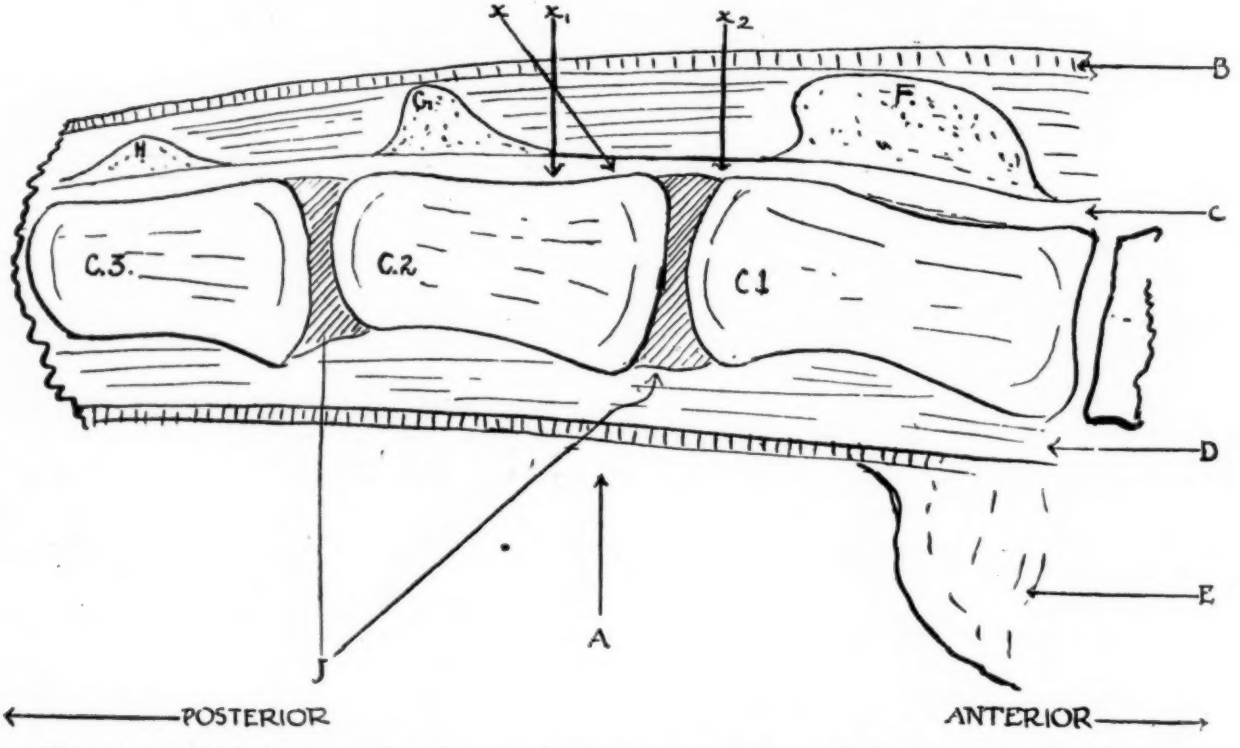

Fig. 10.—Longitudinal Section through First Three Coccygeal Vertebræ. (Drawn to Scale.)

B=Skin.
C=Spinal Canal.
D=Ventral Musculature.
E=Ischial Fat.
F=Spine of First Coccygeal Vertebra.
G=Ditto of Second Coccygeal Vertebra.
H=Ditto of Third Coccygeal Vertebra.
J=Inter-vertebral Cartilages.
C_1, C_2, C_3, Bodies of First Three Coccygeal Vv.

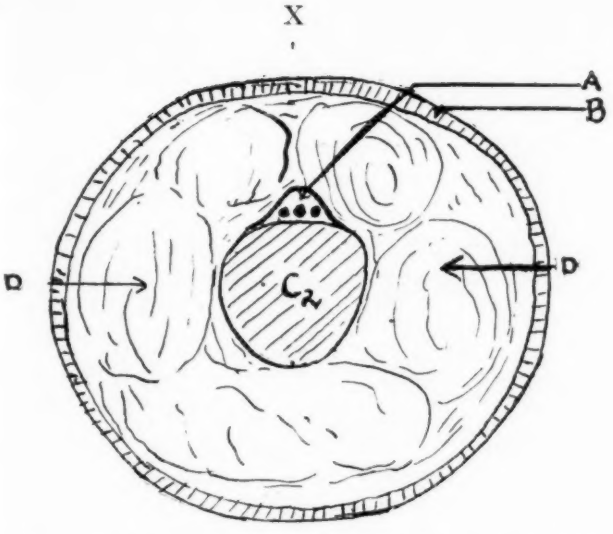

Fig. 11.—Cross Section of the Tail at the level of the first inter-coccygeal space.

A=Epidural Space; containing nerve trunks. (Height about 0·2 inch.)
B=Skin.
D=Musculature.
C_2=Body of second coccygeal vertebra.
X=Plane along which needle must pass to reach space A.

Fig. 12.—Needle drawn to scale. Total length 10-12 cms.

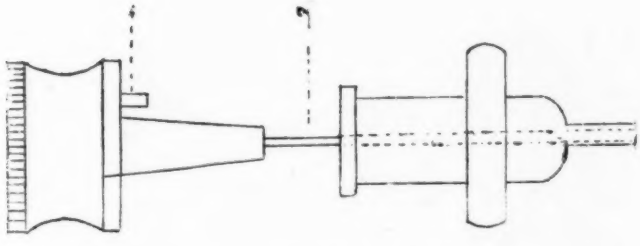

Fig. 12A.—Head of Needle enlarged to scale with stilette partially withdrawn. (1)=Stilette lock-catch; (2)=Stilette.

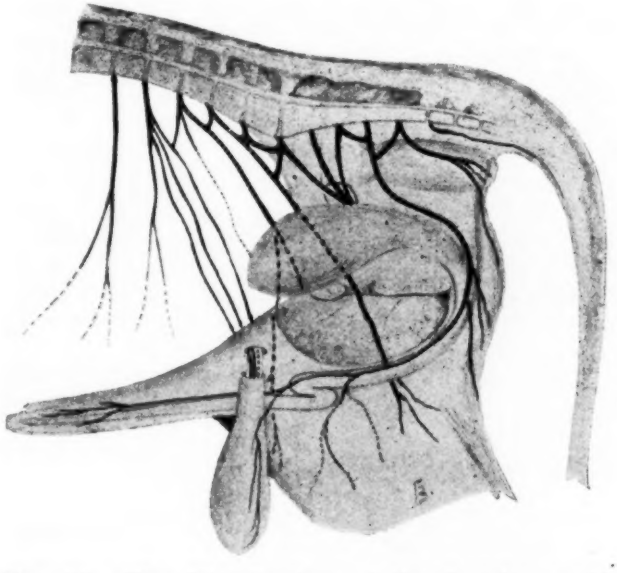

Fig. 13.—The Distribution of the Lumbo-sacral Nerves in the Bull (Schematic).

Posterior anæsthesia blocks the nerves as far forward as the Sciatic, which can be seen disappearing over the bladder. Anterior anæsthesia involves nerves anterior to the Sciatic. Only extensive anterior anæsthesia will desensitise the testicle.

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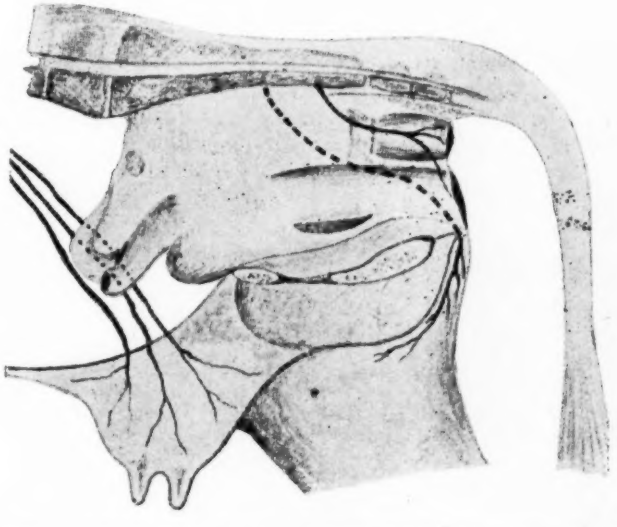

Fig. 14.—Schematic representation of the innervation of the udder and external genitalia of the cow.

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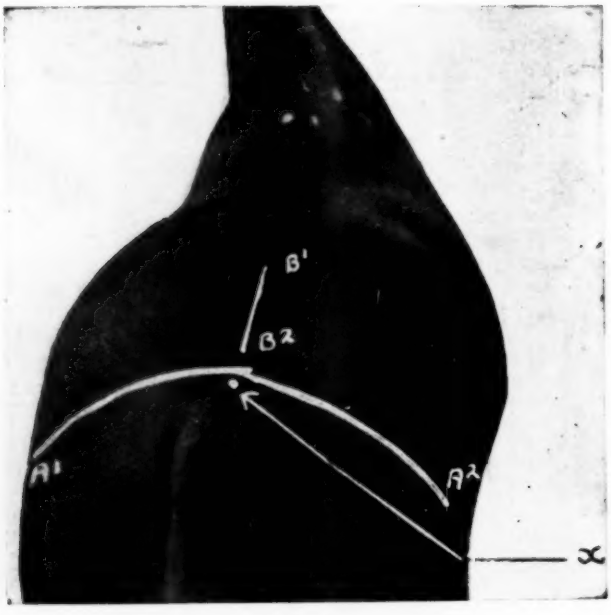

Fig. 17.—The Surface Markings for Location of Site of Injection.

A^1—A^2 = Line connecting hip joints.
B^1—B^2 = Position of summits of sacral spines.
x = Site of injection, *i.e.*, depression between first and second coccygeal spines.

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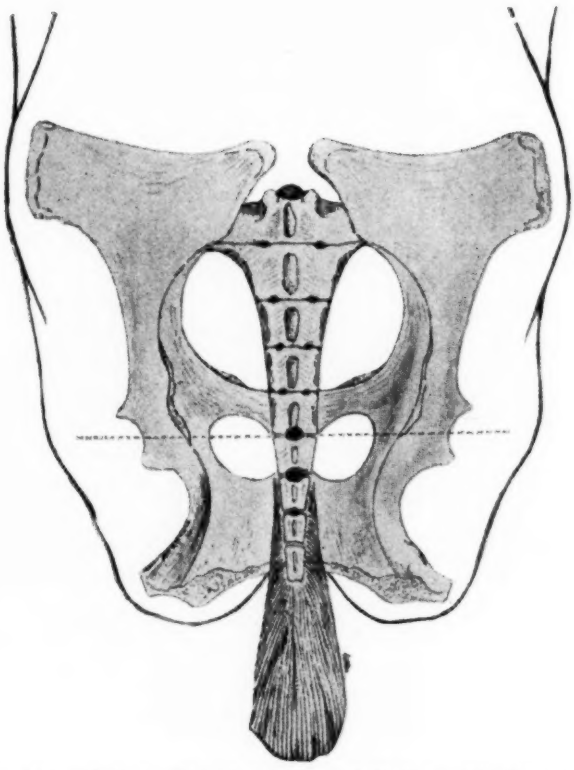

Fig. 19.—Schematic drawing of Pelvic Girdle in relation to Contour of the Animal.

Note.—A transverse line passing through the hip joints cuts the mid-line at the level of the sacro-coccygeal space. The injection is made through the first intercoccygeal space

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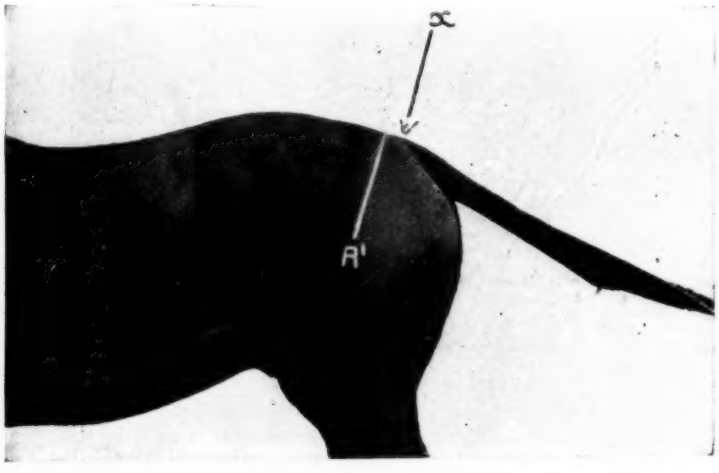

Fig. 18.—The Surface Markings for Location of Site of Injection.

A^1 = Line connecting hip joints. Note that this cuts the upper contour of animal at right-angles.
x = Site of injection; arrow depicts the direction in which needle is to be inserted.

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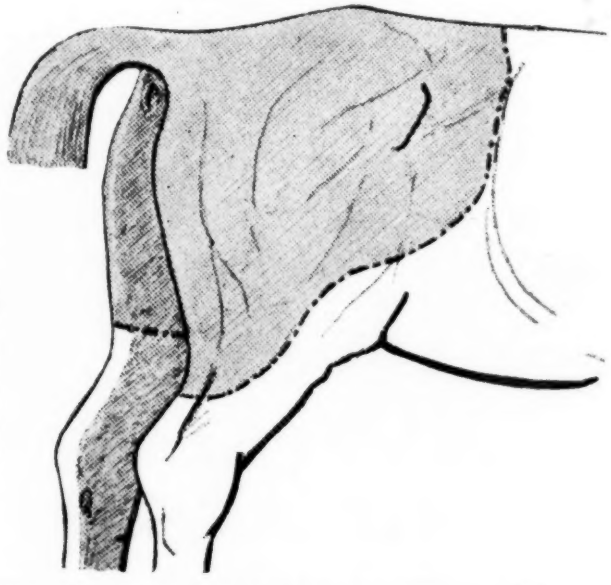

Fig. 21.—Epidural Anæsthesia (Horse) (20 c.c. solution).

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